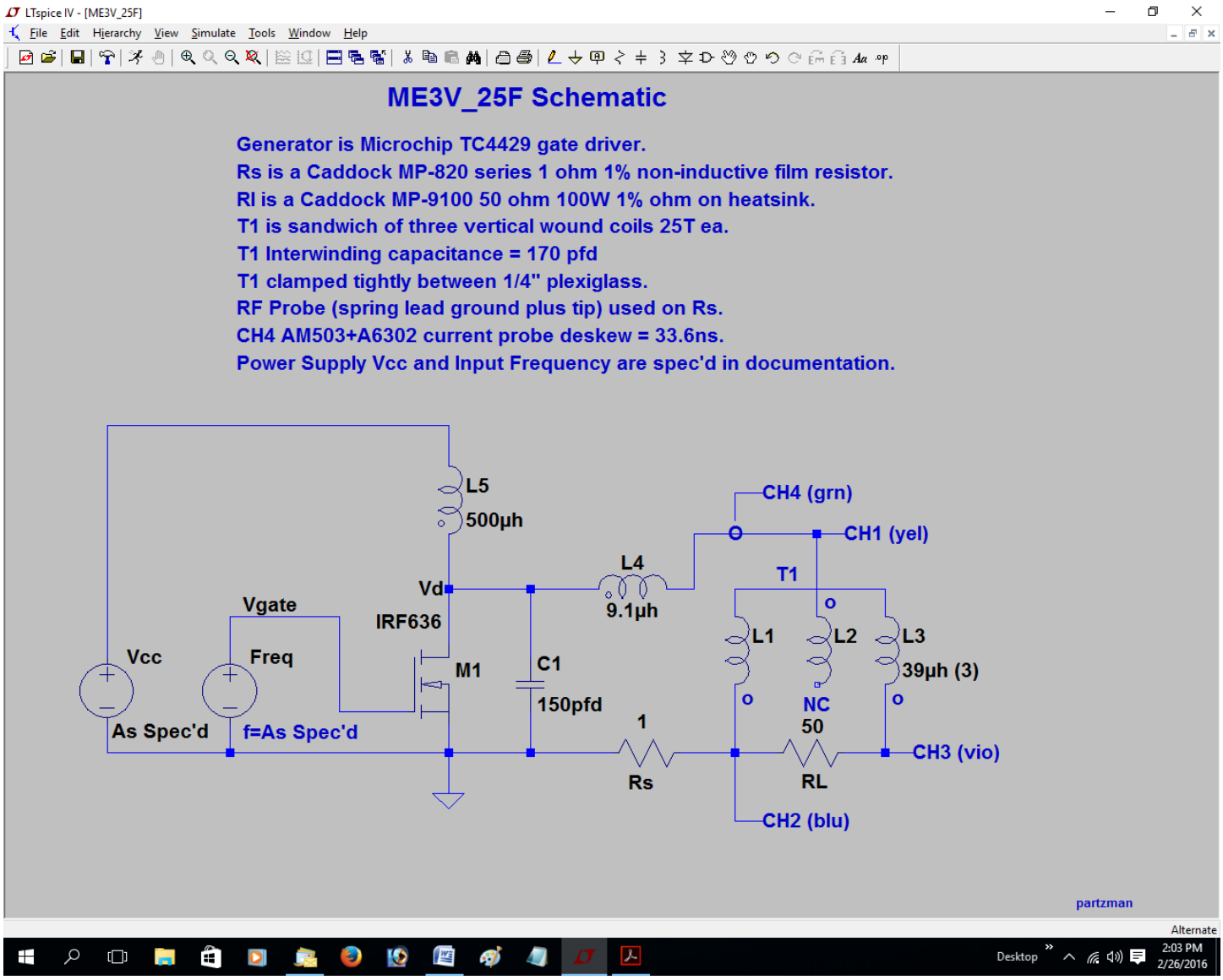
ME3V_25F Test 2_26_16 jmf

This test uses the ME3V pancake or vertical wound coil arrangement as shown in the schematic below. The frequency is 3Mhz square wave driving a modified class-E amplifier using a 55v dc power supply. The TC4429 gate driver uses a 12v dc supply. Both Rl and Rs are Caddock non-inductive 1% film resistors.

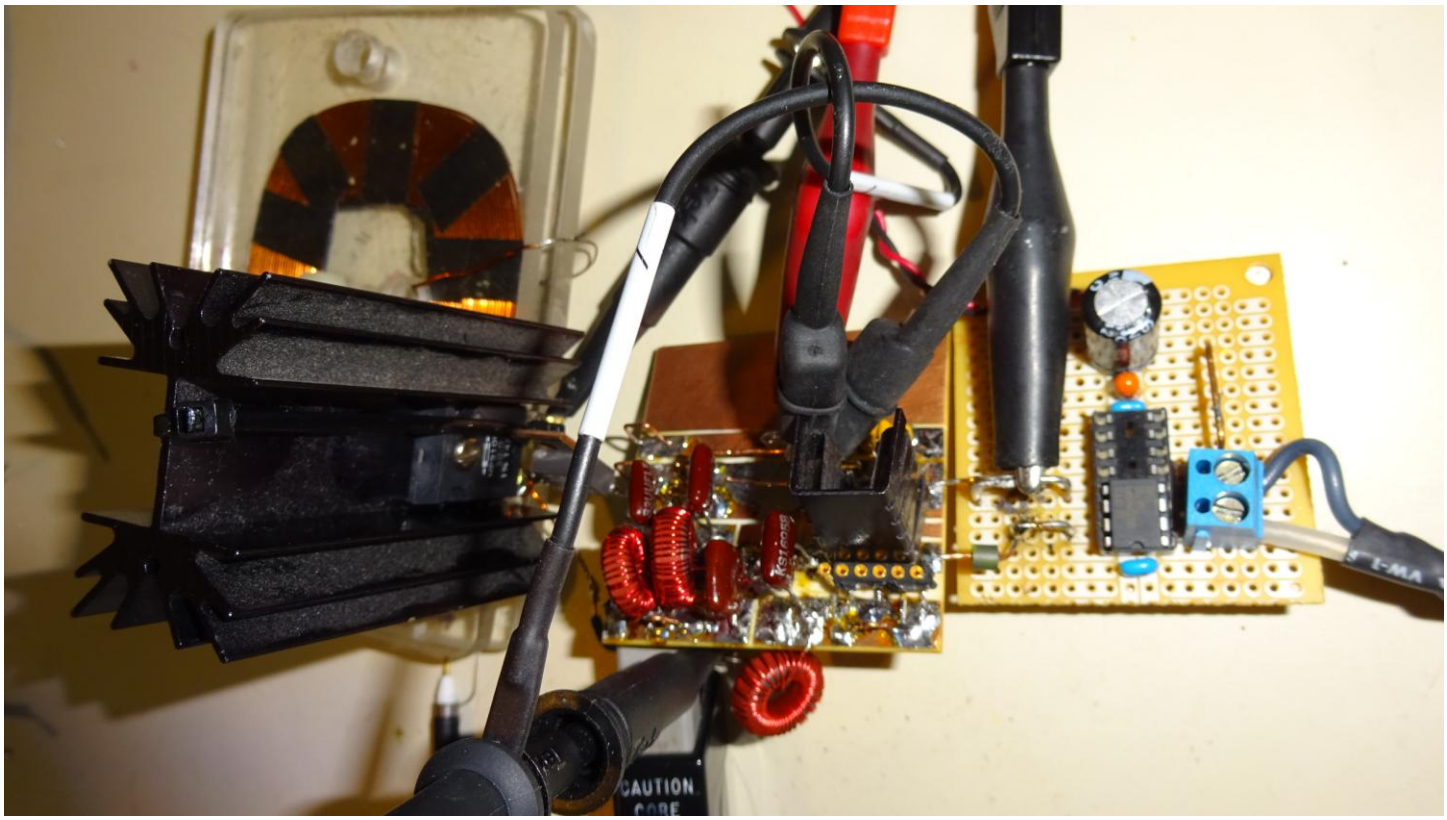
The voltage across Rs is measured with RF probe tips for the shortest connection possible. CH3(blu) shows the Rs voltage and CH4(grn) shows the current probe measurement. The deskew for the current probe and amplifier has been adjusted and calibrated against the voltage measured across Rs with the CH3 probe. The difference seen between the two waveforms is due to the bandwidth limitation of the AM503/A6302 combo. The Rs measurement should be the most accurate.

Although this circuit is capable of higher power, this test is limited due to the maximum peak voltage as seen on CH1(yel). Note the power output of 33.2w (highest obtained to date) the current lead of 103.3'.

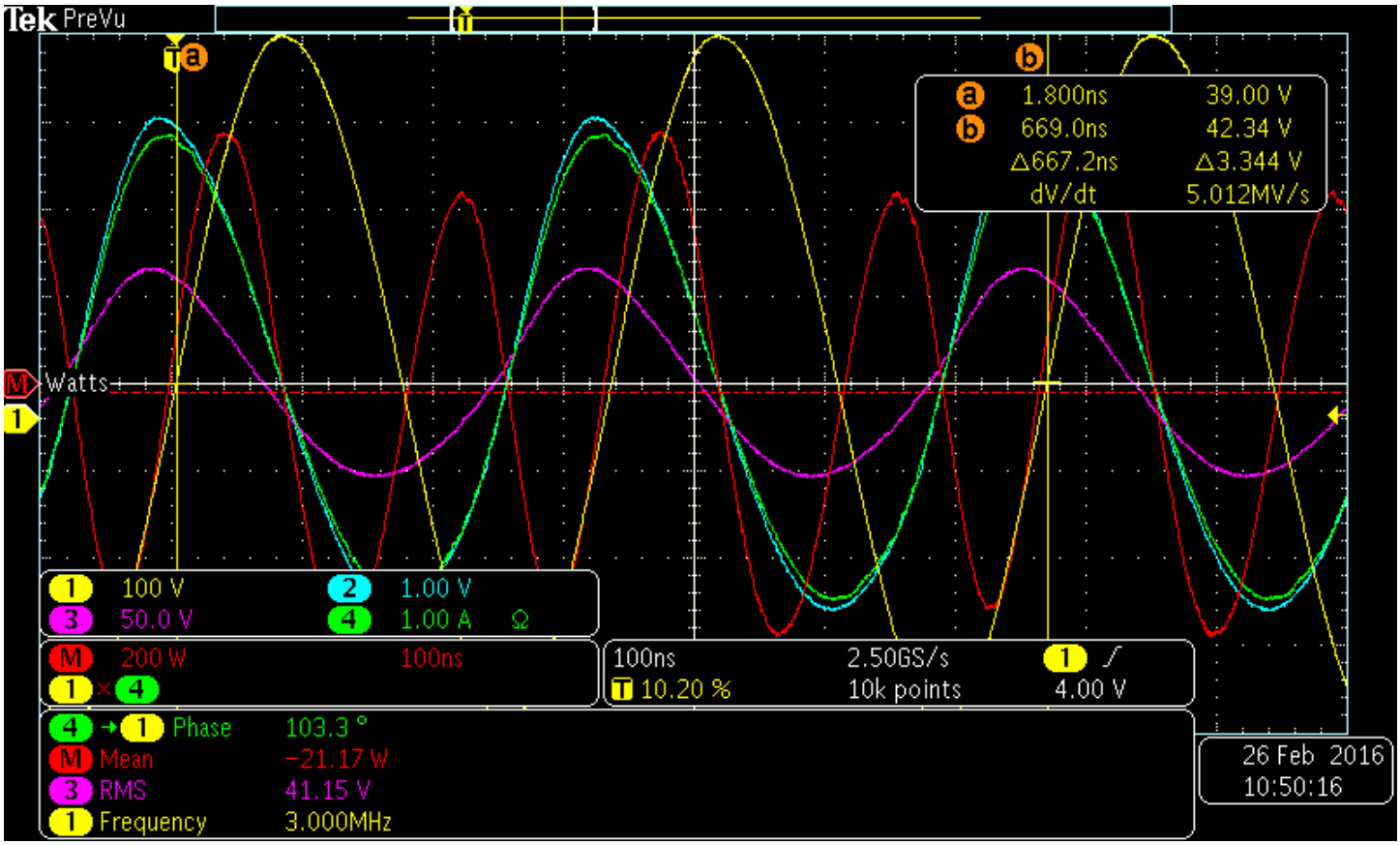
A pix of the actual setup is also included. The resonant LC and the 2nd and 3rd harmonic filters of the class_E amplifier are not used as the ME3V is the resonant component.



ME3V_25F Circuit



ME3V_25F showing Math(red) calculation using CH1(yel) and CH4(grn)



ME3V_25F showing Math(red) calculation using CH1(yel) and CH3(blu) with voltage across Rs